

Patent Claims

- 5 1. Mixing and reducing machine with an upward-conveying mixing spiral that
rotates around a vertical rotational axle,
characterized in that,
after the first mixing spiral (11.1 – 13.2), a second mixing spiral (14.1 – 16.2) is arranged
in the axial direction, whereby between the mixing spirals (11.1 – 13.2; 14.1 – 16.2) a
10 transition zone (19) extends in the axial direction.
2. Mixing and reducing machine according to claim 1,
characterized in that,
the transition zone (19) is free of a mixing spiral.
- 15 3. Mixing and reducing machine according to claim 1,
characterized in that,
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different axial conveyed quantities.
- 20 4. Mixing and reducing machine according to claim 3,
characterized in that,
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different helix angles.
5. Mixing and reducing machine according to claim 3,
25 characterized in that,
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different spiral blade widths.
6. Mixing and reducing machine according to claim 3,
characterized in that,
30 the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational speeds.
7. Mixing and reducing machine according to claim 1,
characterized in that,
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational directions.
- 35 8. Mixing and reducing machine, in particular according to the generic concept of claim
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characterized in that,
the spiral is interrupted in the circumferential direction and is comprised of mixing blades
40 (11.1, 12.1, 13.1, 11.2, 12.2, 13.2; 14.1, 15.1, 16.1, 14.2, 15.2, 16.2) connected one after
the other.
9. Mixing and reducing machine according to claim 8,
characterized in that,
45 at least individual mixing blades (11.1 – 16.2) have a lifting edge (18) that is bent
upwards on their trailing ends in the rotational direction.

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10. Mixing and reducing machine according to claim 8,
characterized in that,
mixing blades (11.1/2 to 16.1/2) arranged essentially one above the other are connected
through a blade carrier (17) set in the rotational direction.

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11. Mixing and reducing machine according to claim 8,
characterized in that,
the mixing blades (11.1 – 16.2) are attached through carrier arms (20) onto a central shaft
(8), the front surface (22) of which is chamfered, at least in sections, increasing radially to
the outside

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12. Mixing and reducing machine according to claim 8,
characterized in that,
at least a few mixing blades (25) mesh on their outer side with catchment elements (24,
26) that are located on a container wall (1).

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13. Mixing and reducing machine according to claim 12,
characterized in that,
the catchment elements are closed ring elements (24).

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14. Mixing and reducing machine according to claim 12,
characterized in that,
the catchment elements are toothed ring elements (26).

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15. Mixing and reducing machine according to claim 12,
characterized in that,
the catchment elements are arranged in segments over the circumference of the container.

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16. Mixing and reducing machine according to claim 1,
characterized in that,
on the end of the mixing blades, a shearing head (27) is arranged that is aligned with the
vertical rotating axle (8).

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